OVERPRODUCTION AND ISOLATION FROM *XANTHOMONAS ALBILINEANS* OF A NEW NON-RIBOSOMALLY SYNTHESIZED PEPTIDE PUTATIVELY INVOLVED IN PLANT-BACTERIA INTERACTIONS

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Background: To date, the only known small molecule synthesized by non-ribosomal peptide synthesis (NRPS) in the genus *Xanthomonas* is the phytotoxin albicidin produced by *Xanthomonas albilineans,* the causal agent of sugarcane leaf scald disease. Recent analyses of available genomic sequences indicated that *X. albilineans*, as well as *Xanthomonas oryzae* and *Xanthomonas translucens*, possess a novel NRPS gene cluster called META-B whose architecture is strainspecific (each sequenced strain is predicted to synthesize a different peptide) and doesn´t resemble to any NRPS gene cluster described to date. Because the META-B NRPS gene cluster is specific to three phylogenetically distant species of *Xanthomonas* associated with monocotyledonous plants, we assume a putative involvement of the new family of small molecules produced by this gene cluster in plant-bacteria interactions.
Objectives: We aimed at isolating and characterizing the small molecule encoded by the META-B NRPS gene cluster of *X. albilineans* in order to study its putative involvement in plant-bacteria interactions.
Methods: We developed a META-B overproducing *X. albilineans* strain by over-expressing the AraC transcriptional regulator which is present within the META-B NRPS gene cluster. HPLC profiles obtained from cultures of wild type *vs* the AraC over-expressing strain were compared. Peaks with significantly increased amplitude in the HPLC profile from the AraC over-expressing strain were collected and their content analyzed by mass spectrometry.
Conclusions: We identified a peptide with a nominal molecular mass > 2 kDa and with an amino acid sequence (MS/MS experiments) which excellently matches the one predicted by A-domain specificities of META-B NRPS genes.

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